

Patent
Serial No. 10/509,233
Amendment in Reply to Office Action of February 14, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of writing ~~an~~ information to an optical recording medium ~~(50)~~ by forming mark areas corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said method comprising the step act of adapting said forming step to modulate the shape of said mark areas in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with ~~the~~ a channel bit to be written, wherein incomplete mark areas are formed by surrounding a non-data area with a data area.

2. (Currently amended) A method according to claim 1, wherein ~~said shape of said mark areas is modulated comprising the act of modulating said shape of said mark areas~~ to obtain a reduced reflection at said mark area.

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3. (Currently amended) A method according to claim 2, wherein said mark area is a pit area, and ~~a protruding portion is generated~~the method comprising the act of generating a protruding portion substantially in the center of said pit area.

4. (Original) A method according to claim 3, wherein the top region of said protruding portion is adapted to form a land level portion substantially in the center of said pit area.

5. (Currently amended) A method according to claim 3, ~~wherein the size of said protruding portion is adjusted~~comprising the act of adjusting the size of said protruding portion based on the size of a total pit area formed by adjacent pit areas.

6. (Currently amended) A method according to claim 1, wherein said mark area is a pit area, and ~~a hole is generated~~the method comprising the act of generating a hole substantially in the center of said pit area.

7. (Currently amended) A method according to claim 6, ~~wherein the size of said pit hole is adjusted~~comprising the act of adjusting

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the size of said pit hole based on the size of a total pit area
formed by adjacent pit areas.

8. (Currently amended) A method according to any one of claim 1,
~~wherein said incomplete mark area is formed~~comprising the act of
forming said incomplete mark area by a focussed-focused electron
beam or a ~~focussed-focused~~ laser beam.

9. (Previously presented) A method according to claim 1,
wherein said optical recording medium is a phase-change recording
medium and said incomplete mark area comprises a small amorphous
mark.

10. (Currently amended) A method according to claim 1, wherein
said optical recording medium ~~(50)~~ is a two-dimensionally encoded
medium.

11. (Currently amended) A method according to claim 10, wherein
~~said incomplete pit area is arranged~~comprising the act of arranging
said incomplete pit area in a hexagonal grid of a two-dimensional
coding scheme.

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12. (Currently amended) A method according to claim 1, wherein said method is used for mastering a record carrier—(50).

13. (Currently amended) A method according to claim 1, wherein said information is a multi-level coded information—and wherein said shape of said incomplete pit area is modulated, the method comprising the act of modulating said shape of said incomplete pit area in accordance with the level of said multi-level coded information.

14. (Currently amended) A method according to claim 1, further comprising the step—act of forming a cluster pattern of said incomplete marks on each channel bit area and controlling the pattern in accordance with the level of a multi-level coded information.

15. (Currently amended) An apparatus for writing an information to an optical recording medium —(50)—by forming mark areas corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said apparatus

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being adapted to modulate the shape of said mark areas in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with the a channel bit to be written, wherein incomplete mark areas are formed by surrounding a non-data area with a data area.

16. (Original) An apparatus according to claim 15, wherein said mark area is a pit area and said apparatus is arranged to form a pillar portion or a hole within said pit area.

17. (Previously presented) An apparatus according to claim 15, wherein said apparatus is arranged to write a multi-level coded information by controlling the shape or number of said incomplete mark areas in accordance with the level of said multi-level coded information.

18. (Currently amended) A record carrier on which an information is written in the form of mark areas corresponding to a predetermined state of said information, wherein the shape of said mark areas is modulated in a predetermined manner so as to obtain

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incomplete mark areas which do only partly cover the area of the medium associated with ~~the~~ a channel bit to be written, wherein incomplete mark areas are formed by surrounding a non-data area with a data area.

19. A record carrier according to claim 18, wherein said incomplete mark area is a pit area comprises a pillar portion or a hole.

20. A record carrier according to claim 18, wherein said information is a multi-level coded information, and wherein the shape or number of said incomplete mark areas defines a level of said multi-level coded information.

21. (New) A method of writing an information to an optical recording medium by forming mark areas corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said method comprising the step of adapting said forming step to modulate the shape of said mark areas in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with a

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channel bit to be written, wherein said mark area is a pit area, and a protruding portion is generated substantially in the center of said pit area, and wherein the size of said protruding portion is adjusted based on the size of a total pit area formed by adjacent pit areas.

22. (New) A method of writing an information to an optical recording medium by forming mark areas corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said method comprising the step of adapting said forming step to modulate the shape of said mark areas in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with a channel bit to be written, wherein said mark area is a pit area, and a hole is generated substantially in the center of said pit area, and wherein the size of said pit hole is adjusted based on the size of a total pit area formed by adjacent pit areas.